

X AND GAMMA RADIOSCOPY IN MONITORING INDUSTRIAL FACILITIES

(ALG/8/009) F5 New

MODEL PROJECT

CORE FINANCING

YEAR	Experts		Group Activity	Equipment	Fellowships		Scientific Visits		Group Training	Sub-Contracts	Misc. Comp.	TOTAL
	m/d	US \$	US \$	US \$	m/d	US \$	m/d	US \$	US \$	US \$	US \$	US \$
1999	0/15	7,350	0	80,000	2/0	6,900	1/0	10,800	0	0	0	105,050
2000	0/15	7,725	0	100,000	1/0	3,600	0/15	5,700	0	0	0	117,025

First Year Approved: 1999

OBJECTIVES: To monitor and analyse the internal structure of materials and assemblies using real time radioscopy.

BACKGROUND: Algeria has important industrial and nuclear infrastructures. Periodic non-destructive monitoring is required for the rational operation of these facilities to prevent possible accidents. So far, monitoring using ionizing radiation has been carried out using conventional techniques, whereby the results are shown on films. This has the disadvantage of being rather slow and subject to human error. National scientists and engineers are developing a technique based on real time radioscopy which is fast and allows image processing by microcomputer in order to facilitate interpretation. After completing the system and optimizing the monitoring parameters, the software will be improved to obtain better image quality, and procedures will be developed for assessing corrosion. Similar programmes have been developed in several industrialized countries. The Centre for Scientific and Technical Research in Welding and Control (CSC) has the responsibility of carrying out QC of industrial and nuclear infrastructures in Algeria. However, most NDT companies are private organizations; the CSC presently only carries out spot checks and does not generate funds this way. With the new real time image processing system, the CSC will have a distinct advantage over the other NDT firms and expects to become a self-financing, or even a profit making organization, in the near future.

PROJECT PLAN: The equipment items purchased by the Government (including a computer controlled X-ray generator) and through this TC project will be installed at the CSC in the first year. Expert services and training through fellowships will focus on the handling and maintenance of the radioscope and on the quantitative analysis of the radioscopic images. The second year will be devoted to the purchase of additional equipment and the actual testing and utilization of the automated and computerized system for the processing of radiographic images.

NATIONAL COMMITMENT: Further to the provision of necessary laboratory facilities, personnel and operational budget, the national authorities will purchase a computer controlled X-ray generator. The technical know-how in real time industrial radiography developed under this project will be made available to other Member States in the region, possibly through AFRA.

AGENCY INPUT: Provision of equipment, mainly for radiographic image processing; related expert services and fellowship training.

PROJECT IMPACT: The introduction of automated and computerized processing of radiographic images will lead to faster radiographic inspection and improved reliability of test results. Industrial firms, including oil firms, and nuclear installations will benefit through improved safety, better performance and early detection of problem areas. Improved local capability will decrease dependence on outside specialized NDT organizations. Other countries in the region are expected to benefit from the technology.